

# Zertifikat Certificate



Zertifikat Nr. Certificate No.  
R 2057213

Blatt Page  
03

Ihr Zeichen Client Reference  
ML

Unser Zeichen Our Reference  
00042-BKR/LP- E2066130E01

Ausstellungsdatum Date of Issue  
31.03.2000 (day/mo/yr)

**Genehmigungsinhaber License Holder**  
Bourns, Inc.  
  
1200 Colombia Avenue  
Riverside, CA 92507  
U.S.A.

**Fertigungsstätte Manufacturing Plant**  
Bourns Electronic (Taiwan) Ltd.  
1 Kung 6th Road  
Industrial Zone II, Lin-Kou  
Taipei Hsien 244  
TAIWAN

**Prüfzeichen Test Mark**

**Geprüft nach Tested acc. to**



EN 60730-1:1995+A11+A12+A1.  
EN 60730-1/A2+A13+A14+A15:1998

**Zertifiziertes Produkt (Geräteidentifikation)**  
Certified Product (Product Identification)

**Lizenzentgelte - Einheit**  
License Fee - Unit

KALTLEITER (PTC Resettable Overcurrent Protectors)

Fortsetzung (Continuation)

Bezeichnung: Nennspannung: Nennstrom: Nennleistung:  
(Model) (Rated voltage) (Hold current) (Power dissipation) W:

|          | V: | A:   | W:   |
|----------|----|------|------|
| MF-RX110 | 60 | 1,10 | 1,50 |
| MF-RX135 | 60 | 1,35 | 1,70 |
| MF-RX160 | 60 | 1,60 | 1,90 |
| MF-RX185 | 60 | 1,85 | 2,10 |
| MF-RX250 | 60 | 2,50 | 2,50 |
| MF-RX300 | 60 | 3,00 | 2,80 |
| MF-RX375 | 60 | 3,75 | 3,20 |

|             |    |      |      |
|-------------|----|------|------|
| MF-S120 (S) | 15 | 1,20 | 1,20 |
| MF-S150 (S) | 15 | 1,50 | 1,30 |
| MF-S175 (S) | 15 | 1,75 | 1,50 |

Fortsetzung auf Blatt 4 (Continued on page 4)



Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.  
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.  
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

# Zertifikat

# Certificate



Zertifikat Nr. Certificate No.  
R 02057213

Blatt Page  
0030

| Ihr Zeichen Client Reference | Unser Zeichen Our Reference | Ausstellungsdatum Date of Issue (day/month/year) |
|------------------------------|-----------------------------|--|
| ML                           | ZTW2-KLL- 02066130 023      | 09.08.2002                                       |

**Genehmigungsinhaber License Holder**  
Bourns Inc.  
1200 Colombia Avenue  
RIVERSIDE, CA 92507  
USA

**Fertigungsstätte Manufacturing Plant**  
Bourns Electronic (Taiwan) Ltd.  
1 Kung 6th Road Industrial Zone II  
LIN-KOU, TAIPEI HSIEN 244  
TAIWAN, R.O.C.

**Prüfzeichen Test Mark**



**Geprüft nach Tested acc. to**  
EN 60730-1:2000

**Zertifiziertes Produkt (Geräteidentifikation)**  
Certified Product (Product Identification)

**Lizenzentgelte - Einheit**  
License Fee - Unit

Kaltleiter (PTC Resettable Overcurrent Protectors)

Wie Blatt (As Page) 01

Ergänzung für Bezeichnung (Addition for Type Designation):  
a) KF-RC12/250  
b) KF-RC12/250U

Bezeichnung (Type Designation):  
a) KF-RX012/250  
b) KF-RX012/250U

1  
1

Nennspannung (Rated Voltage):  
DC 60V

Haltestrom (Hold Current):  
0.12A

Verlustleistung (Power Dissipation):  
3W



2

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**TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln**

Tel. (+49/221) 8 96 - 13 71 Fax (+49/221) 8 96 - 39 35 e-mail: Althoff@de.tuv.com

**Zertifizierungsstelle**

Dipl.-Ing. M. Krüger

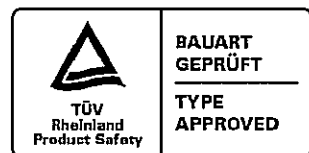


Zertifikat Nr. *Certificate No.*  
R 02057213      Blatt *Page*  
0045

|                                     |                                    |                          |                      |
|-------------------------------------|------------------------------------|--------------------------|----------------------|
| <i>Ihr Zeichen Client Reference</i> | <i>Unser Zeichen Our Reference</i> | <i>Ausstellungsdatum</i> | <i>Date of Issue</i> |
| 12032521/CYC                        | ZTW2-KLL- 02066130 035             | 10.05.2005               | (day/mo/yr)          |

|   |  |
|---|--|
| <i>Genehmigungsinhaber License Holder</i>                         | <i>Fertigungsstätte Manufacturing Plant</i>  |
| Bourns Inc.<br>1200 Colombia Avenue<br>Riverside, CA 92507<br>USA | Bourns Electronic (Taiwan) Ltd.<br>1 Kung 6th Road Industrial Zone II<br>Lin-Kou, Taipei Hsien 244<br>Taiwan, R.O.C. |

*Prüfzeichen Test Mark*      *Geprüft nach Tested acc. to*  
EN 60730-1:2000



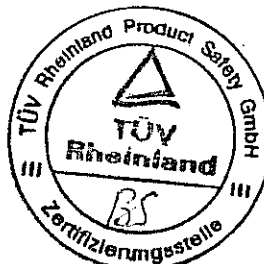
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|--|---------------------------------|
| <i>Zertifiziertes Produkt (Geräteidentifikation)</i> | <i>Lizenzentgelte - Einheit</i> |
| <i>Certified Product (Product Identification)</i>    | <i>License Fee - Unit</i>       |

Kaltleiter (PTC Resettable Overcurrent Protectors)

Wie Blatt (As Page) 01

Ergänzung (Addition)

| <i>Bezeichnung (Type Designation)</i> | <i>Bemessungs- spannung (Rated Voltage)</i> | <i>Haltestrom (Hold Current)</i> | <i>Bemessungs- leistung (Rated Wattage)</i> |   |
|---------------------------------------|---|----------------------------------|---|---|
| MF-RX110/72                           | DC 72V                                      | 1.10A                            | 1.5W  | 1 |
| MF-RX135/72                           | DC 72V                                      | 1.35A                            | 1.7W  |   |
| MF-RX160/72                           | DC 72V                                      | 1.60A                            | 1.9W  |   |
| MF-RX185/72                           | DC 72V                                      | 1.85A                            | 2.1W  |   |
| MF-RX250/72                           | DC 72V                                      | 2.50A                            | 2.5W  |   |
| MF-RX300/72                           | DC 72V                                      | 3.00A                            | 2.8W  |   |
| MF-RX375/72                           | DC 72V                                      | 3.75A                            | 3.2W  |   |



1

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Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln

Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com

Dipl.-Ing. B. Scheirer

# Zertifikat

# Certificate



Zertifikat Nr. Certificate No.  
R 50075506

Blatt Page  
0006

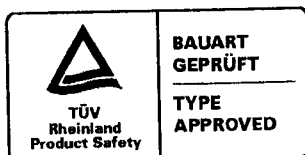
| Ihr Zeichen Client Reference | Unser Zeichen Our Reference | Ausstellungsdatum | Date of Issue (day/mo/yr) |
|------------------------------|-----------------------------|-------------------|---------------------------|
| 12038586/HM                  | ZTW2-ILI- 02066130 002      | 03.03.2006        |                           |

**Genehmigungsinhaber License Holder**  
Nidec Copal Electronics Corp.  
Nishi-Shinjuku, Kimuraya Bldg.  
7-5-25 Nishi-Shinjuku  
Shinjuku-ku, Tokyo 160-0023  
Japan

**Fertigungsstätte Manufacturing Plant**  
ZTW1-BKR-02066130 001

**Prüfzeichen Test Mark**

**Geprüft nach Tested acc. to**  
EN 60730-1:2000



**Zertifiziertes Produkt (Geräteidentifikation)**  
**Certified Product (Product Identification)**

**Lizenzentgelte - Einheit**  
**License Fee - Unit**

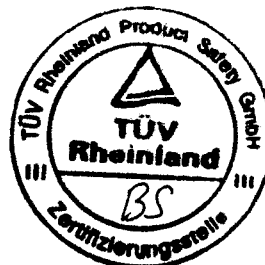
**Kaltleiter (PTC Resettable Overcurrent Protectors)**

Wie Blatt (As Page) 01

Ergänzung (Addition)

| Bezeichnung (Type Designation) | Bemessungs-<br>spannung (Rated Voltage) | Haltestrom (Hold Current) | Bemessungs-<br>leistung (Rated Wattage) |   |
|--------------------------------|---|---------------------------|---|---|
| PRCP-RX110/72                  | DC 72V                                  | 1.10A                     | 1.5W                                    | 1 |
| PRCP-RX135/72                  | DC 72V                                  | 1.35A                     | 1.7W                                    |   |
| PRCP-RX160/72                  | DC 72V                                  | 1.60A                     | 1.9W                                    |   |
| PRCP-RX185/72                  | DC 72V                                  | 1.85A                     | 2.1W                                    |   |
| PRCP-RX250/72                  | DC 72V                                  | 2.50A                     | 2.5W                                    |   |
| PRCP-RX300/72                  | DC 72V                                  | 3.00A                     | 2.8W                                    |   |
| PRCP-RX375/72                  | DC 72V                                  | 3.75A                     | 3.2W                                    |   |

Fortsetzung auf Blatt (Continued on Page) 0007



1

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Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.  
This certificate is based on our Testing and Certification Regulation. The product fulfills above-mentioned-requirements, the production is subject to surveillance.

Zertifizierungsstelle

**TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln**

Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com

Dipl.-Ing. B. Scheirer

# Zertifikat

# Certificate



Zertifikat Nr. Certificate No.  
R 50075506

Blatt Page  
0007

Ihr Zeichen Client Reference  
12038586/HM

Unser Zeichen Our Reference  
ZTW2-ILI- 02066130 002

Ausstellungsdatum  
03.03.2006

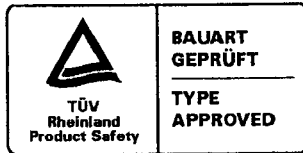
Date of Issue  
(day/mo/yr)

**Genehmigungsinhaber License Holder**  
Nidec Copal Electronics Corp.  
Nishi-Shinjuku, Kimuraya Bldg.  
7-5-25 Nishi-Shinjuku  
Shinjuku-ku, Tokyo 160-0023  
Japan

**Fertigungsstätte Manufacturing Plant**  
ZTW1-BKR-02066130 001

**Prüfzeichen Test Mark**

**Geprüft nach Tested acc. to**  
EN 60730-1:2000



**Zertifiziertes Produkt (Geräteidentifikation)**  
*Certified Product (Product Identification)*

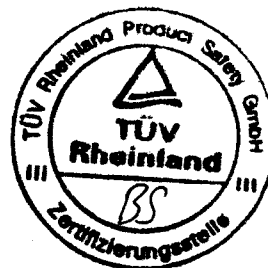
**Lizenzentgelte - Einheit**  
*License Fee - Unit*

Kaltleiter (PTC Resettable Overcurrent Protectors)

Wie Blatt (As Page) 01

Fortsetzung (Continuation)

| Bezeichnung<br>(Type<br>Designation) | Bemessungs-<br>spannung<br>(Rated Voltage) | Haltestrom<br>(Hold Current) | Bemessungs-<br>leistung<br>(Rated Wattage) |   |
|--------------------------------------|--|------------------------------|--|---|
| PRCP-USMF005                         | DC 30V                                     | 0.05A                        | 0.6W                                       |   |
| PRCP-USMF010                         | DC 30V                                     | 0.10A                        | 0.6W                                       | 1 |
| PRCP-USMF020                         | DC 30V                                     | 0.20A                        | 0.6W                                       |   |
| PRCP-USMF035                         | DC 6V                                      | 0.35A                        | 0.6W                                       |   |
| PRCP-USMF050                         | DC 13.2V                                   | 0.50A                        | 0.6W                                       |   |
| PRCP-USMF075                         | DC 6V                                      | 0.75A                        | 0.6W                                       |   |
| PRCP-USMF110                         | DC 6V                                      | 1.10A                        | 0.6W                                       |   |



1

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This certificate is based on our Testing and Certification Regulation. The product  
fulfills above-mentioned-requirements, the production is subject to surveillance.

Zertifizierungsstelle

**TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln**

Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com

Dipl.-Ing. B. Scheirer

Bourns Inc.  
Mr. Poting Lan, QA Sr. Manager  
-  
1200 Columbia Avenue  
Riverside, CA 92507-2114  
USA

Date : 29.05.2007  
Our ref. : KLL ZTW2  
Your ref.: 12048366/PL

**Ref : R TÜV-Mark Approval**

Type of Equipment : (PTC Resettable Overcurrent Protectors)  
Model Designation : See Certificate  
Certificate No. : R 02057213 0050  
Report No. : 02066130 040

Dear Mr. Poting Lan,

The above specified technical equipment has been tested and found to be in accordance with the relevant requirements.

Enclosed you will find the certificate of approval.

If cancellation of the certificate is submitted by November 15 in a given year, no fee will be charged for the following year.

We appreciate your kind support and would like to offer our assistance and continuous services in the future.

Please contact our office for approval of your new products.

With kind regards,

Certification Body



Dipl.-Ing. B. Scheirer

CC: Bourns Electronic (Taiwan) Ltd.

Enclosure

**TÜV RHEINLAND TAIWAN LTD.**

7F, No. 2, Min Chuan E. Rd., Sec.3,  
Taipei 104, Taiwan, R.O.C.  
Tel. (02) 2516-6040  
Fax (02) 2504-5040  
<http://www.twn.tuv.com>

TAICHUNG BRANCH:  
10F, No. 219, Min Chuan Rd.,  
Taichung 403, Taiwan, R.O.C.  
Tel. (04) 2301-9898  
Fax (04) 2301-9696

KAOHSIUNG BRANCH:  
33F-3, No. 80, Min Tzu 1st Rd.,  
Kaohsiung 807, Taiwan, R.O.C.  
Tel. (07) 380-1722  
Fax (07) 380-1728

NANKANG BRANCH:  
No. 99-23, Nan Kang Rd., Sec. 2,  
Taipei 115, Taiwan, R.O.C.  
Tel. (02) 2783-6650  
Fax (02) 2783-7117

Bourns Electronic (Taiwan) Ltd.  
Mr. Poting Lan, Manager  
Quality Assurance  
1 Kung 6th Road Industrial Zone II  
Lin-Kou, Taipei Hsien 244  
Taiwan, R.O.C.

Date : 29.05.2007  
Our ref. : KLL ZTW2  
Your ref.: 12048366/PL

**Ref : R TÜV-Mark Approval**

Type of Equipment : (PTC Resettable Overcurrent Protectors)  
Model Designation : See Certificate  
Certificate No. : R 02057213 0050  
Report No. : 02066130 040

Dear Mr. Poting Lan,

Enclosed please find above certification documents.  
Please forward these originals to the certificate holder.

If you contact our office, please quote our reference above.

We thank you for your cooperation.

The certificate holder is: Bourns Inc.

With kind regards,

Certification Body



Dipl.-Ing. B. Scheirer

Enclosure

**TÜV RHEINLAND TAIWAN LTD.**

7F, No. 2, Min Chuan E. Rd., Sec.3,  
Taipei 104, Taiwan, R.O.C.  
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<http://www.twn.tuv.com>

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Fax (07) 380-1728

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No. 99-23, Nan Kang Rd., Sec. 2,  
Taipei 115, Taiwan, R.O.C.  
Tel. (02) 2783-6650  
Fax (02) 2783-7117

# Zertifikat

# Certificate



Zertifikat Nr. *Certificate No.*  
R 02057213

Blatt *Page*  
0050

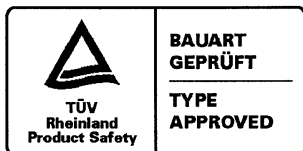
| <i>Ihr Zeichen Client Reference</i> | <i>Unser Zeichen Our Reference</i> | <i>Ausstellungsdatum</i> | <i>Date of Issue</i><br>(day/mo/yr) |
|-------------------------------------|------------------------------------|--------------------------|-------------------------------------|
| 12048366/PL                         | ZTW2-KLL- 02066130 040             | 29.05.2007               |                                     |

**Genehmigungsinhaber *License Holder***  
Bourns Inc.  
1200 Columbia Avenue  
Riverside, CA 92507-2114  
USA

**Fertigungsstätte *Manufacturing Plant***  
Bourns (Xiamen), Ltd.  
4&5F Guang-Yao Building, Torch  
Hi-Tech Industrial Dev. Zone  
Xiamen 361006  
P.R. China

## Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*  
EN 60730-1:2000+A1+A12+A13+A14



**Zertifiziertes Produkt (Geräteidentifikation)**  
*Certified Product (Product Identification)*

**Lizenzentgelte - Einheit**  
*License Fee - Unit*

Kaltleiter (PTC Resettable Overcurrent Protectors)

Wie Blatt (As Page) 01

Änderung für Bezeichnung : a) MF-R020/72  
(Change for Type Designation) b) MF-R025/72  
c) MF-R030/72  
d) MF-R040/72  
e) MF-R050/72  
f) MF-R065/72  
g) MF-R075/72  
h) MF-R090/72

Bezeichnung : a) MF-RX020/72  
(Type Designation) b) MF-RX025/72  
c) MF-RX030/72  
d) MF-RX040/72  
e) MF-RX050/72  
f) MF-RX065/72  
g) MF-RX075/72  
h) MF-RX090/72



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Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.  
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

**TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln**  
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com  
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. B. Scheirer

Nidec Copal Electronics Corp.  
Mr. Hatsuo Morishita, Engineering  
Manager  
Development & Design Division  
Nishi-Shinjuku, Kimuraya Bldg.  
7-5-25 Nishi-Shinjuku  
Shinjuku-ku, Tokyo  
160-0023 JAPAN

Date : 11.12.2007  
Our ref. : KLL ZTW2  
Your ref.: 12099847/HM  
Customer no.: 393740

**Ref : R TÜV-Mark Approval**

Type of Equipment : PTC Resettable Overcurrent Protectors  
Model Designation : See Certificate  
Certificate No. : R 50075506 0009  
Report No. : 02066130 034

Dear Mr. Hatsuo Morishita,

The above specified technical equipment has been tested and found to be in accordance with the relevant requirements.

Enclosed you will find the certificate of approval.


If cancellation of the certificate is submitted by November 15 in a given year, no fee will be charged for the following year.

We appreciate your kind support and would like to offer our assistance and continuous services in the future.

Please contact our office for approval of your new products.

With kind regards,

Certification Body



Dipl.-Ing. B. Scheirer

Enclosure

**TÜV RHEINLAND TAIWAN LTD.**

7F, No. 2, Min Chuan E. Rd., Sec.3,  
Taipei 104, Taiwan, R.O.C.  
Tel. (02) 2516-6040  
Fax (02) 2504-5040  
http: //www.twn.tuv.com

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10F, No. 219, Min Chuan Rd.,  
Taichung 403, Taiwan, R.O.C.  
Tel. (04) 2301-9898  
Fax (04) 2301-9696

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33F-3, No. 80, Min Tzu 1st Rd.,  
Kaohsiung 807, Taiwan, R.O.C.  
Tel. (07) 380-1722  
Fax (07) 380-1728

NANKANG BRANCH:  
No. 99-23, Nan Kang Rd., Sec. 2,  
Taipei 115, Taiwan, R.O.C.  
Tel. (02) 2783-6650  
Fax (02) 2783-7117

# Zertifikat

# Certificate



Zertifikat Nr. *Certificate No.*  
R 50075506

Blatt *Page*  
0009

Ihr Zeichen *Client Reference*  
12099847/HM

Unser Zeichen *Our Reference*  
ZTW2-KLL- 02066130 034

Ausstellungsdatum  
11.12.2007

*Date of Issue*  
(day/mo/yr)

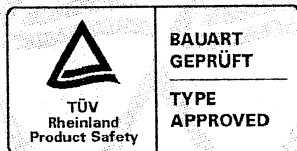
**Genehmigungsinhaber *License Holder***  
Nidec Copal Electronics Corp.  
Nishi-Shinjuku, Kimuraya Bldg.  
7-5-25 Nishi-Shinjuku  
Shinjuku-ku, Tokyo  
160-0023 JAPAN

**Fertigungsstätte *Manufacturing Plant***  
ZTW1-BKR-02066130 001

## Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*

EN 60730-1:2000+A1+A12+A13+A14



Zertifiziertes Produkt (*Geräteidentifikation*)  
*Certified Product (Product Identification)*

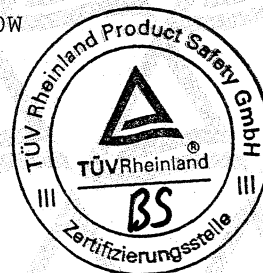
Lizenzentgelte - Einheit  
*License Fee - Unit*

Kaltleiter (PTC Resettable Overcurrent Protectors)

Wie Blatt (As Page) 01

Ergänzung (Addition)

| Bezeichnung<br>(Type<br>Designation) | Bemessungs-<br>spannung<br>(Rated Voltage) | Haltestrom<br>(Hold Current) | Bemessungs-<br>leistung<br>(Rated Wattage) |   |
|--------------------------------------|--|------------------------------|--|---|
| PRCP-RX020/72                        | DC 72V                                     | 0.20A                        | 0.40W                                      | 1 |
| PRCP-RX025/72                        | DC 72V                                     | 0.25A                        | 0.45W                                      |   |
| PRCP-RX030/72                        | DC 72V                                     | 0.30A                        | 0.50W                                      |   |
| PRCP-RX040/72                        | DC 72V                                     | 0.40A                        | 0.55W                                      |   |
| PRCP-RX050/72                        | DC 72V                                     | 0.50A                        | 0.75W                                      |   |
| PRCP-RX065/72                        | DC 72V                                     | 0.65A                        | 0.90W                                      |   |
| PRCP-RX075/72                        | DC 72V                                     | 0.75A                        | 0.90W                                      |   |
| PRCP-RX090/72                        | DC 72V                                     | 0.90A                        | 1.00W                                      |   |



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Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.  
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.  
This certificate is based on our Testing and Certification Regulation. The product  
fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

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